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DEPARTMENT OF AGRICULTURE

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SPECIFICATIONS

No. 4.

MAR 11 1918

OF THE

WORKMANSHIP AND MATERIALS

REQUIRED IN THE ERECTION AND COMPLETION OF A  
NEW BUILDING FOR THE ACCOMMODATION

OF THE

DEPARTMENT OF AGRICULTURE,

IN

WASHINGTON, D. C.



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PREPARED UNDER ORDERS FROM THE COMM'R OF AGRICULTURE,

BY CLUSS & KAMMERHUEBER,

*Architects and Civil Engineers.*

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE  
1867.

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## SPECIFICATIONS

OF THE

MATERIAL TO BE PROVIDED AND THE LABOR  
TO BE PERFORMED

*In the erection and completion of a building for the DEPARTMENT OF AGRICULTURE, to be located on Reservation No. 2, in the city of Washington, D. C., at the intersection of axis of west 13th street with a line running west from the centre of the main building of the Smithsonian Institute, according to these specifications, and the annexed drawings specified hereafter, making a part of the same, prepared and designed, under orders of the "Commissioner of Agriculture," by Messrs. Cluss & Kammerhueber, architects and engineers, and agreeably to such further drawings and directions, in explanation thereof, as may be found necessary hereafter:*

## DRAWINGS.

Drawings

- No. 1. Plan of footings, drainage, and ducts.
2. Plan of basement.
3. Plan of first story.
4. Plan of second story.
5. Plan of third story, (of the wings.)
6. Front and rear elevation.
7. Side elevation.
8. Transverse section.
- 9—21. Detail sheets.

## DESCRIPTION AND SIZE OF BUILDING.

Description.

The northern, or main front of the building, will be 169 feet 10 inches long from corner to corner, having 2 wings, each 33 feet 9 inches long, which project 3 feet from the centre part.

The eastern and western elevation will be 60' 6" long from corner to corner.

The south wall of the building is 169 feet 10 inches long; has projecting wings similar to those of north wall, and, besides, a staircase in centre, 22 feet 4 inches from corner to corner, and projecting 9 feet.

There will be a basement in the building, which is to contain a boiler-room, the coils for a steam-heating apparatus, with the necessary ducts for the supply of fresh air from the outside of the building, and flues which transmit the heated air to the rooms above.



Coal cellars, laboratory, 4 finished packing-rooms, hoist, entry, corridors, water-closets, and a number of other rooms which will not be finished for the present.

Access is had to the basement by outside doors from east and south, and coals may be brought in by a slide in front of northern elevation.

A flight of granite steps leads through the main entrance to the vestibule, corridor, neatly finished office rooms, library, and stairs to basement and second story.

Each wing has a staircase, and the main stairs to museum is directly opposite the vestibule.

The second story contains the agricultural museum, which is 103 feet long by 51 feet 2 inches wide, and 26 feet 4 inches high in the clear. It is lighted by 9 semi-circular windows, 7 by 15 feet in size, has imposing entrance doors, and a bold stucco cornice extending around the ceiling. The wings are divided off into rooms for office purposes, and have a third story, as per drawings.

The building is covered by French roofs, containing attic stories 12 feet in height, which will not be finished inside for the present. The roof over museum supports the ceiling and will be trussed.

A hoist will be constructed in the east wing, reaching up to the third story.

The building will be heated by coils of steam-pipes located in basement, fed from boilers placed in a pit 4 feet below floor line of basement, and communicating with the rooms above by hot-air flues governed by registers.

The eastern, northern, and western fronts will be of first-class pressed bricks. The base of these fronts, with a return of 3 feet 6 inches on south front, will be faced with Seneca sandstone.

All other trimmings of windows and doors, also mouldings and belts which are not specified as being Seneca stone or iron, will be of best brownstone.

The main cornice and attic windows to be constructed of wood, with rosettes, keystones, and other ornaments of cast iron.

The slate will be polygonated, of 2 tints, arranged to patterns.

The roof will be crowned by cast-iron ornamentation, running along the upper edges of the French roofs.

The vestibule, corridors of first story, and the two landings of main stairs will be laid with encaustic tiles of plain patterns.

The main stairs, with the access thereto, will be



constructed fire-proof, of wrought and cast iron, with ornamental iron railing, and is to be lighted by a large-sized window, finished with enameled colored glass. The boiler-room to be constructed absolutely fire-proof. The building will have the modern conveniences and precautions against fire supplied by the plumbers.

#### DIMENSIONS.

Dimensions.

The basement floor to be 9 feet 4 inches below the floor of first story. The tiling of vestibule to be  $52\frac{1}{2}$  inches above the ground immediately in rear of building. The level of this ground will form the future grade all around the building.

The floor of second story to be 17 feet above the floor of first story.

The floor of third story (in the wings) to be 14 feet above that of second story.

The future floor of attic story in wings to be 18 feet above third-story floor.

The attic stories to be 12 feet high in the clear when finished.

For dimensions of walls and further particulars, reference is made to the figures marked on plans, sections, and detail drawings.

Whenever a difference shall be found between the dimensions represented in the drawings and the figures marked thereon, the latter have to be adhered to.

#### MATERIALS.

Materials.

The materials are to be of the kinds and qualities hereinafter written and described; and when not particularly specified and stipulated, they are to be of the best marketable qualities for the several kinds used. All the materials used are to be furnished, prepared, worked, set up, put together, and completely finished at the sole cost of contractor, and to be at all times subject to the inspection of the superintending architects for approval or rejection.

#### EXCAVATION.

Excavation.

Such excavations as are required for trenches of all the walls and piers, and outside and inside foundations of every kind, for boiler pit, areas, coal slide, and for basement, also for gas, water, and drain pipes, are to be made of the necessary and requisite lengths, breadths, and depths, level and true, as directed by the architects, and all rubbish and earth not required

or found unfit for filling in, to be deposited near building ground, as desired by the superintendent of the grounds.

**Filling in.** The spaces around the foundations, ducts, and pipes will be filled in with clean earth, immediately after the walls are cemented, and rammed hard.

**Foundations.**

## FOUNDATIONS.

**Footings.**

All the outside walls must have bluestone footings, 3 feet in width and 9 inches thick. Selected bluestones, 2 feet in width, will do for the base course of interior walls. Bluestone footings,  $2\frac{1}{2}$  feet square, below column in basement. Bluestone slabs, 4 feet by 12 inches, for the support of the round corners in vestibule and staircase. The base course to be laid to depths marked on transverse section, provided this depth proves to be sufficient. The grounds to be inspected and approved by architects before the base courses are laid.

All the footings to be laid as headers, or crosswise of the trenches, and to have straight and even beds and joints, hammered down solid, with close joints, flushed in solid with good ground mortar.

**Bluestone walls.**

The foundation and basement walls, marked blue on the plan, are to be constructed of good and approved bluestones, of large size, laid upon their broadest beds, on the base course prepared for the purpose, with good beds and builds, in ground mortar of best quality, mixed in proper proportions and well worked and manipulated. For dimensions refer to plans.

**Backing of base.**

The front and side elevations will have a stone facing, which must be put up, in connection with the bluestone backing, to the height of lower face of first tier of beams.

**Rough-hammering.**

The bluestone work of rear elevation will reach up to lower face of entrance-story joists, but will show on the outside for the full height of base, which is covered by a band of stone. Whatever shows of bluestone-work in the rear and side elevations, above ground or in the areas, must be neatly rough-hammered, the jambs of windows to be brought up square so as to receive the frames. Proper skewbacks to be formed wherever required to start arches.

**Pointing.**

All joints on that side of basement walls enclosing grated areas to be pointed with cement. The outside of basement walls, which will be filled in with earth or gravel, has to be plastered with a solid coat of cement.

**Cementing.**

Leave out all openings for ducts and pipes. &c., as may be directed.

If, against expectations, there should be any extra depth of foundations required below the depths given in drawings, it will have to be done in such manner as the exigencies of the case will require. The value of such work to be calculated according to the *actual* cubic contents of such alterations, and to be paid at rates to be stated in the proposals.

#### CUT STONE.

Cut stone.

All the area walls and enclosing walls of pit in boiler-room will be covered with well and neatly axed North River bluestone coping, 16 inches in width, 5 inches thick, laid in and pointed with cement, and properly clamped.

Bluestone.

A bluestone flagging, 3 feet in width, 4 inches thick, on a bed of 6 inches of well-screened sand all around the base of building, except where areas preclude the necessity for this. The outside door of basement, as well as all the inside doors opening on corridors, and the communicating door between the boiler-room and coal cellar, to have neatly axed bluestone sills, 12 inches in width and 5 inches thick.

The steps leading to basement and to pit for boiler are of axed bluestone, 8 by 11 inches in size.

Bluestone window-sills and lintels for basement windows of rear elevation, neatly axed. Also, bluestone slabs, sufficiently strong, over openings in walls for the air ducts.

A bluestone, 3 feet square, with circular hole, iron cover and chain, for coal slide.

The swelled steps, platform and sill, leading to main entrance, with their scrolled skewbacks, to be of best pin-hammer (8 pins) dressed granite, strictly according to detail drawings, well bedded and walled in.

Granite steps, platform, and sill.

The base on three sides of building, with returns 3 feet 6 inches long on the rear elevation, to be of best Seneca sandstone, in three courses, together 57 inches high, well rubbed, with a dressed chamfer worked on top.

Seneca stone base.

Form the basement windows with sills 5 inches high, projecting 1 inch, and chamfered lintels; drill the stone where required for the grating.

The base of the two end wings is brought up with a pitch of 1 inch to the foot, also that part of base to the sides of main entrance outside of the buttresses.

The sills of all windows and doors on rear elevation, above the basement, are of Seneca stone, the window-

sills 5 inches high; the door-sills are 8 inches high, and are 2 inches wider than thickness of wall. The bluestone walls of basement on rear elevation are capped by a beveled base strip of dressed Seneca stone, 5 by 9 inches.

The first-story walls on rear elevation are capped by a band of dressed Seneca stone, projecting  $1\frac{1}{2}$  inch from face of pilasters and first-story walls, with proper washers on top, and in size 9 by 9 inches.

Brownstone.

The trimmings of main entrance door, with bases and carved keystone, the caps and upper sections of buttresses flanking the door, are of best rubbed brownstone; also, the moulded belt course, 12 by 16 inches in size, above first story, for front and side elevations, with returns on rear elevation; further, the beveled sub-base next above the belt, 7 by 10 inches in size; also, the plate with raised inscription above main entrance.

The plain projecting belt band around the pilasters and butting against the iron trimmings of second-story windows for the extent as above, and including the moulded belt around centre projection of front, also the 2 candelabras, all of unexceptionable, sound, rubbed brownstone.

Also, the plain band in third story of wings fitting in between pilasters and ornamental window-sills.

All the cut stone must be well and properly set, firmly anchored to the backing, wherever feasible, and clamped where necessary.

All the necessary jobbing, drilling, rebating for gratings, and so on, to be well and promptly done.

#### BRICK-WORK.

Common brick-work.

The walls and piers, marked red on basement plan, to be carried up to the necessary heights; the pit for boiler, also the cold-air ducts, smoke and hot-air flues, to be constructed as shown in plans and sections; the fronts of face-bricks to be backed with, and the southern wall to be constructed of, the best hard-burnt, hand-made red bricks. Salmons, pillars, and arch bricks will not be allowed on the ground.

The cold-air ducts to the coils in the basement, which supply hot air to the building, to be made of brick-work, laid in good mortar, and plastered throughout on their inside.

The smoke-stacks will commence in the foundation walls. The first-story walls will be constructed hollow, with an air space of  $1\frac{1}{2}$  inch, 4 inches distant from inner face of wall, the inner facing well bonded to the main part of walls.



All the walls, inside and outside, are to be covered entirely with a course of best Pennsylvania slate, well overlapped and bedded in cement, at the height of the base of building for outside and at basement floor for inside walls.

The southern front, which is not faced with pressed bricks, must be built with bricks of uniform color.

All this brick-work to be laid with narrow and close joints, every course to be filled in solid and well flushed up with mortar wherever exposed to the eye or unplastered; every sixth course to consist of headers.

The joints of all inside brick-work to be sunk one-half inch from the face to receive plastering.

All openings in walls to have 9-inch discharging arches extending through the entire thickness of the walls; the hearths to be arched.

The landings of main stairs to be arched over between iron beams with 4-inch brick-work, the haunches leveled with concrete, ready for tiling.

The boiler-room to be arched over similarly, with sleepers imbedded in the concrete, ready for the wooden flooring of office above.

The recess in Commissioner's office to be built and arched fire-proof, ready for receiving a safe.

The hot-air flues to be carried up according to directions, and each to have an opening towards the casings of coils, and one near the floor of the room to which it is designated.

Build in each opening in the rooms a register.

An opening, with sheet-iron door, into chimney flue of boiler, in order to ventilate it. Fill in with 6-inch wide brick-work all around where this smoke flue cuts through the floors of building.

Wall in cast-iron thimbles, and purge the smoke flues well all around and leave them free from obstructions and perfect throughout on the completion of the work.

Flues to be topped out with pressed-brick facings and iron heads, furnished by iron-worker, but set by bricklayer; all these heads to conform to the detail drawing in height and size.

Wall in all iron anchors and other fastenings, iron hooks for railings, window trimmings, and other stone and iron work. Wooden plugs and cradlings to be walled in wherever requisite to secure jamb casings, furrings, washboards, door and window frames, and other wood and iron work.

The mortar used in the brick-work to consist of good, fresh, wood-burnt lime and clean, sharp-gritted sand, properly mixed and thoroughly manipulated.

Color.

Flushed joints.

Sunk joints.

Discharging arches.

Arching.

Flues.

Registers.

Precautions around  
smoke flue.

Thimbles.

Topping out.

Wall in.

Mortar.

First-class pressed-brick work.

The front and two side elevations, including the projecting parts and ornamental brick-work of the same, to be of first-class pressed-brick work, strictly according to elevations and detail sheets. The pressed brick to be from Russel & Burn's (Baltimore) best make. The bricks to be uniform in color and size, according to drawings.

Pilasters, dentals, and patterns.

Build and form all pilasters, projections, diaper pattern around semi-circular heads of museum windows, and dental cornice.

Bonding.

All these bricks to be well bonded to the brick backing, to be laid in the best manner with tucked or ruled joints, in best white mortar, made of two parts fresh, wood-burnt Baltimore quick-lime, and one part clean, sharp, well-washed sand.

Oiling and pencilling.

All the pressed-brick work to be properly cleaned down and well oiled twice with boiled linseed oil; joints penciled with white lead.

Marble mantle.

Furnish and set one marble mantle worth one hundred dollars, and one grate, of neat pattern, worth twenty-five dollars; lay a marble hearth.

Scaffolding.

Furnish, and put up in the safest manner all necessary scaffolding; keep the walls at all times completely covered from the weather. Furnish and put up all centering to the arches and other temporary supports. Assist the iron man with the necessary labor when he comes to set such work as is in connection with brick-work. All jobbing pertaining to brick-work, as cutting away for and making good after plumbers, gas, and iron men, etc., required in completing the building, to be done promptly, without extra charge.

Centering.

Rubbish.

The rubbish connected with the mason-work must be removed, and the building thoroughly cleaned of mortar after the plastering is completed.

#### BRICK PAVING AND DEAFENING.

Deafening.

Deafen the first and second tier of beams with a mixture of loam and straw.

Brick paving in concrete.

The laboratory, corridors, boiler-room, and entry of basement to be laid with best hard-burnt paving bricks, well grouted and cleaned, on a bed of 6 inches thick concrete, composed of cement mortar, mixed with coarse sand and stones in proper proportions.

Concreting.

The packing-rooms in basement will be concreted as above; but sleepers, furnished by carpenters, will be imbedded in the concrete which support a wooden floor.

Paving in sand.

The coal cellar and areas will be paved on a bed of well-screened sand, 6 inches in thickness.

The vestibule, corridors of first story, and landings of main stairs will be laid with plain patterns of Minton's encaustic tiles of best quality, of such color and shape, in cement mortar, as will be directed by the architects.

#### IRON-WORK.

All iron-work to be strictly according to detail sheets and full-size drawings, and perfectly sound.

The column in basement to be of cast iron,  $\frac{1}{2}$  inch thick. It is covered with a cast-iron plate for the support of the girder.

Substantial iron platforms, steps, and wrought-iron railings in front of 2 outside doors of rear elevation.

Wrought-iron railings, with  $\frac{3}{4}$ -inch circular balusters, 6 inches between centers, and 2 feet 6 inches high, let into the copings of sunk areas of rear and side elevations, and having top rails of flat iron  $1\frac{1}{2}$  inch by  $\frac{1}{2}$  inch, mounted with semi-circular  $\frac{3}{4}$ -inch beads. All to be well and substantially fastened.

Wrought-iron gratings, as per elevation, to all basement windows. The areas for air ducts are grated over with flat iron  $1\frac{1}{2}$  inch by  $\frac{1}{4}$  inch,  $1\frac{3}{4}$  inch apart, well stiffened by a round bar, and have a frame of double thickness set into rebates in coping.

Ornamental sills, lintels, and drops for the first-story windows of front and side elevations.

Ornamental trimmings, with sills, base, and segmental heads, for second-story windows of wings on 3 elevations.

Ornamental trimmings, with moulded sills and square heads, for windows on third story above the latter.

Ornamental trimmings, with sills, paneled bases, with inserted rosettes, semi-circular heads, drops and belts, crowned by top ornaments, for 4 large front windows of museum.

The same finish, without sills and bases, for the fifth window of museum front. Two flower-baskets on top of stone candelabras.

Cast-iron rosettes in soffit of main cornice, between the brackets, for 3 whole elevations and for the extent of the wings on fourth elevation, and brackets for dentals of main cornice.

Cast-iron keystones, rosettes, and vases for the large and small attic windows.

Cast-iron chimney tops and ridge ornaments. The corner posts of the latter are of wood, but are enriched by iron scroll ornaments.

Cast-iron frieze ornaments below the ridge ornaments of the wings.

Tiling.

Iron-work.

Columns.

Iron steps.

Railings.

Gratings.

Iron trimmings.



Studs and handles.

Furnish cast-iron studs and bronze handles, finished and fitted as per design, for main entrance door. All this work to be done strictly according to the detail sheets, the patterns to be inspected by architects before any castings are made.

The castings must all be perfect and sound and  $\frac{1}{4}$  inch thick, where not otherwise described or required for strength.

Anchors.

Provide a sufficient number of anchors to insure the stability and permanency of the iron-work, in connection with brick and wood work; set all work in place, in most permanent manner, level and plumb, assisted by bricklayer and carpenter, where the case may call for it.

Iron washboard.

Form iron washboards similar to the wooden ones to both sides of smoke flue for boiler.

Cast-iron boots.

Furnish cast-iron boots, 5 feet in length, for 6 down spouts, of 5-inch inside diameter.

Iron-work of roof.

Cast-iron chairs, washers, and plates, forming bearings for braces of the 4 trusses over museum, to be furnished to carpenter, also the suspension rods, of sizes as inscribed, and all the screw bolts required for the roofs.

Furnish and set 4 wrought-iron double T beams, each 20 feet 6 inches long, 9 inches high, weighing 30 lbs. per foot, for ceiling of boiler-room.

Further, one 9-inch beam, as above, 21 feet long, and eight 6-inch beams, each 7 feet 6 inches long, for landings of main stairs, and two 12-inch beams, each 21 feet 6 inches long, weighing 42 pounds per foot.

Thimbles.

Provide a cast-iron thimble, 12 inches diameter, for smoke flue of boiler, and thimbles of smaller size for chemist's rooms.

Registers.

Registers for hot air to be furnished of 12 by 12 inches size in the average, set in soapstone frames. These registers to be selected by architect, and to be of numbers as marked on the plans by letter R.

Anchors.

All anchors for fastening the tiers of beams most secure, and for tying cast-iron work to the walls, must be provided as directed.

Wire gauze.

The openings of the cold-air ducts in outside walls to have frames covered with strong wire gauze, with meshes sufficiently small to prevent the communication of noxious animals.

Main stairs.

The two lower flights of main stairs are laid outside, on angle iron 3 inches by  $\frac{1}{2}$  inch in size, fastened to the walls, and their string-courses around well-hole on same angle iron, laid upon the 9-inch walls enclosing basement-stairs and water-closets.

Ornamental cast-iron brackets are screwed down on

these angles, and the treaders and risers are fastened to them, as per detail drawings. Each treader has two ears projecting towards the well-hole, through which pass circular balusters,  $\frac{7}{8}$  inch in diameter, connected on top by a bar of flat iron and scrolled ornaments, forming, in their ensemble, the railing. The upper course is formed similarly, but is supported at outsides by channel iron, 6 inches by  $2\frac{3}{4}$  inches, and  $\frac{1}{2}$  inch thick, and has besides, at half length of treaders, a 6-inch double T beam for support.

These stringers are connected with the rolled beams, described above, by cast-iron chairs, and start at first-story floor from cast-iron shoes resting on brick piers and ornamental newels.

The well-hole on top of stairs, at both sides of the upper flight, will receive an iron casing, along which the ornamental railing will be continued.

Two emblematic ornaments for main front, as per design, of cast iron. Emblems.

The entire iron-work to have one good coat of oil paint, composed of boiled linseed oil and red lead, before used in building. *The cast-iron work must be cleaned and painted immediately after cooling.* Oil paint.

No part of the iron-work to be used in the building before it is examined and approved. Examining.

All other iron-work necessary for the proper and timely execution of the plans, and to give permanency and stability to the building, to be furnished of best American iron, as may be required, and those parts which are to be inserted in the building by the other mechanics, as it progresses, must be furnished to them promptly when wanted for use, and for any delay from want of seasonable delivery the contractor shall be responsible. All the blacksmith's and iron-worker's jobbing on the building to be performed, tools, labor, and materials for the work to be furnished, to the entire satisfaction of the architects.

#### CARPENTER-WORK.

The carpenter-work throughout to be substantial and workmanlike, executed as shown or indicated on elevations, sections, plans, and according to detail drawings furnished or hereafter prepared, and as described in these specifications. Workmanship.

All the lumber to be perfectly straight and even, of the dimensions hereafter specified or marked on the drawings; of best quality; free from any defects—such as loose knots, knot-holes, shakes, and blue sap—thoroughly seasoned, the finish-stock prepared to re- Lumber.

ceive painting, and to be unexceptionable in every respect.

Girders.

The girders supporting beams of first floors below vestibule and staircase, and those supporting floors of second story, to be of sizes as shown on transverse section. They rest upon brick walls and an iron column in the basement, and upon brick walls in the first story. The girders in first story are encased.

Level up for the girders with *flagstone* or *slate*.

Flooring joists.

The three tiers of beams in central building, and the four tiers in wings, to consist of joists of North Carolina yellow pine, 3 by 12 inches, properly cambered, set 16 inches between centres; also those joists forming the ceiling of main staircase. But those spanning the corridors of 10 feet width will be 3 by 10 inches. The beams for rooms to have 2 rows of strong cross-bridging, done with 2 by 4-inch scantling, firmly nailed with three nails at each end. The beams of corridors have one row of same cross-bridging. Said joists must have a fair bearing on the walls, without blocking, pass each other at least eight (8) inches, and must be clamped at intervals and anchored to the outside walls so as to form ties for the opposite walls.

Framing.

All framing around stairways, flues, etc., must be done in the best manner with tusk-tenons, secured with hardwood pins. Trimmers to be of double thickness and same height as the floor beams.

Trimmers.

Partitions.

The partitions between rooms in 2d and 3d stories of wings, and that around main entrance to museum, to be constructed of 3 by 6-inch studdings, the studs to be placed 16 inches from centers, framed, trussed, and bridged complete, according to directions. Door and angle posts to be 4 by 6 inches. These partitions to have top and bottom sills.

Furring.

The outside walls of 2d and 3d stories must be furred out for the inside shutter.

The outside walls of packing-rooms and chemist's rooms in basement will be furred with  $\frac{5}{8}$ -inch pine strips, ready for lathing.

The ceiling of museum must be furred out for the stucco cornice.

Sleepers.

Furnish and lay sleepers 2 by 4 inches for the floor of office above the boiler-room, also for the packing-rooms in basement.

Pitch of roofs.

The pitch of the French roofs to be  $3\frac{1}{2}$  inches to the foot.

Roof over museum.

The roof over museum to be constructed with 4 trusses, each starting from a tie beam 54 feet 6 inches in length, 9 by 16 inches in size, placed upon wall

plates 6 feet in length. (The floor beams of attic story are notched into those tie beams.) From these beams springs a compound truss, composed of timber and rods. Double principals, 6 by 14 inches each; a shaped sill notched into the tie beams; double collar-beams, 4 by 14 inches; single collar beams, 9 by 14 inches; single struts, 9 by 14 inches; purlines 6 by 14 inches; suspension rods of 2 inches and  $1\frac{1}{2}$  inch in diameter, with heavy washers, constitute the trusses in the main. All the important bearings in the truss are secured by interposed iron plates. The single struts are framed into the double collar beams by means of cast-iron chairs, into which the ends of timbers are fastened with screw bolts and nuts. Longitudinal purlines are laid upon principals and collar beams. For further particulars reference is made to the detail sheets.

The roofs of each wing will also be framed with two trusses, consisting of principals 6 by 14 inches, starting from a shaped sill, notched into the floor beams of attic story; further, of braces 6 by 9 inches, and double collar beams 4 by 14 inches. The purlines supporting the sheathing run again longitudinally, all strictly according to drawings.

Roofs of wings.

Cradling for fastening the main cornice to, to be furnished to bricklayer, and lookout joists to be shaped and walled in, for same purpose and for forming the gutters.

Cradling and lookout joists.

All the above timber will be of white pine, well framed, with all proper bolts and fastenings, so as to make a secure and complete job.

White pine.

Sheath all the roofs with  $\frac{5}{4}$ -inch rough boards, tongued and grooved, not over 8 inches in width, firmly nailed down to each purline, jointed only over purlines, and well prepared to receive the slate and metal coverings.

Sheathing.

The first and second tier of joists will be counter-ceiled with one-inch cullings, ready for deafening.

Counter ceiling.

The packing-rooms in basement, all the rooms and corridors of first and second stories and third stories in wings, except those parts specified as being tiled, will be laid with  $\frac{5}{4}$ -inch North Carolina yellow pine flooring boards, not exceeding 4 inches in width, tongued and grooved and dressed, unexceptionable prime boards, put down in best manner. The attic story will not be floored for the present.

Flooring.

Board partitions, with framed doors having panels, prepared for glazing, knobs, bolts, and spring fastenings, for forming urinaries and water-closets, made of narrow, tongued, grooved, and beaded  $\frac{5}{4}$ -inch prime

Board partitions.



white pine boards, planed on both sides, properly stiffened and prepared for painting.

Stairways.

A light but neat stairway, with yellow pine treaders and risers, establishing communication between the rooms of chemist on basement and first story. The well-hole is closed by a trap-door balanced with counter-weights. A neat, plain railing with newel to be furnished and put up securely.

A plain but strong flight of stairs to the basement from main staircase, according to directions.

A stairway extends in each of the two wings from first story up to attic story, with courses and landings, as laid down on ground plans. These stairs will be fitted with  $\frac{3}{4}$ -inch ash risers and  $\frac{5}{4}$ -inch ash-plank treads with moulded nosings, all well seasoned and free from all defects. These stairs are to be supported by joist horses, 3 inches thick and of proper strength, well framed into trimmers. The inner joist horses, enclosing well-hole, to be lined with  $\frac{5}{4}$ -inch white pine boards and mouldings, as will be directed.

Hand rails.

The hand rail of iron main stairs to be of walnut, ogee-shaped,  $2\frac{1}{2}$  by 4 inches in size, let into the flat iron bars on top of ornamental iron railing.

The hand rails of the stairs in wings to be oval, of walnut,  $2\frac{1}{2}$  by 3 inches in size, start from a plainly carved walnut newel, and are supported by octagonal baluster of walnut, 2 inches in size; the railing to finish around the well-hole in attic story.

Hoist.

Furnish, make, and put up a hoist reaching from basement to the attic story, of size as on the plans, including guide-posts running the whole height; make the platform and the box for the weight to run in, put it up complete in running order, with wire rope for weight. The power to be applied around the rim is a fly-wheel, into the groove of which passes an endless rope; from this wheel is applied a pinion, from this pinion a sphere wheel on a shaft connecting in a groove wheel with jogs; on this a wire rope capable of bearing heavy weight—on one end the burden to be hoisted; on the other is suspended a counter balance weight. All this warranted to perform well.

Skirting.

The washboards to be formed of a sub-base, screwed to the floor, of a plank let into it, and of a top moulding grooved into the plank, together 9 inches high, thickness and style as per drawings. Plain six-inch washboards are sufficient for corridor rooms of basement, tops chamfered. The stairs to have similar skirting, with the sub-base left off, the steps let in. All these washboards to be well nailed to the furring, or to blocks

walled in, not more than 32 inches apart; they have to be put upon the plastering.

Furnish and put up the main cornices with moulded attic boards, formings for gutter, crown-mouldings, plate, paneled soffit, enriched by iron rosettes, brackets, bed-mouldings, frieze-boards and brackets, and architrave mouldings, strictly according to detail sheets.

Main cornice.

Furnish and set 8 yellow pine corner posts, shaped as per detail, for ridge ornament on wings.

Form the cornice on top of French roof with frieze-board, rebated to receive the slate. Three-inch beads and frieze-boards along the ridges of roof of wings.

Wings.

The pediment in centre of front to be shaped and formed, as per details, with attic window, including carved scrolls, keystone, and all necessary precautions to facilitate the flashing to be done by tinner.

Pediment.

Four large-sized attic windows for front and sides of wings, according to drawings and as above.

Attic windows.

Eight smaller oval attic windows, for front and side elevations, as per detail, with iron keystones, well fastened.

Eleven similar windows for rear elevation, but with the ornamentation left off.

Stud out for and form the vestibule, with oval ceiling, and niches at both its sides.

Vestibule.

Furnish planed and rebated frames, of 4 by 7-inch white pine timber, for main entrance and vestibule doors.

Frames.

The main entrance door, with moulded transoms and semi-circular transom lights, to be made and trimmed in all respects strictly according to drawing. The outside or moulded face of this door will consist of well-seasoned best oak, firmly screwed and glued to the white-pine backing. Continue the panel or inner face of transom along the vestibule.

Main entrance door.

The vestibule door to be framed of  $1\frac{3}{4}$ -inch stuff, with flush panels, and an oval pane for inserting glass. The door to be covered with green baize, fastened with round-headed brass nails; all to be furnished and done by contractor for carpenter-work. The transom of this door to be paneled on both sides, like the inside of transom of main entrance door; the transom lights to conform to outside door, but without the ornamentation. Trimmings strictly according to drawings.

Vestibule door.

The doors of basement to be four-paneled, double moulded, of  $1\frac{3}{4}$ -inch stuff; frames of same thickness, and plain trimmings. The figures inscribed on plans give the outside measure of frames.

Inside doors.

The doors of first story are six-paneled, double

moulded, 7 feet 6 inches high, of  $1\frac{3}{4}$ -inch stuff, have a paneled transom and transom lights 18 inches high; the transom lights to be provided with mechanism for swinging them. They are trimmed similarly to the windows and as shown on transverse section. The top ornament on corridor side of doors is of stucco.

The second and third story single doors are alike the latter, but only 7 feet high, and have 15-inch transom lights.

The double doors leading to museum are 12 feet 6 inches high, 2 inches thick, with  $1\frac{3}{4}$ -inch frames, and formed and trimmed in all respects equal to draft on transverse section of building. The ornamental top-finish over the two doors at end of hall is of stucco; and these doors have only plain mouldings on their outside, whilst the door from main staircase has two full faces.

The outside doors leading to basement, and those on first story of rear elevation, are four-paneled, double moulded, 2 inches thick, with 2-inch frames. The side door of basement has open panels, covered with wire-work; movable shutters.

The vestibule door and central museum door are hung with double-working patent spring hinges, of fully sufficient strength. The main entrance door is hung with silver-plated butt hinges, of proportionate strength. All the other doors are hung with common but substantial butt hinges. All doors to have double-joist lintels over them.

Cornice moulding.

A cornice moulding around the top of partition inside the museum, as per section.

Windows.

The basement windows to be made with plank frames, rebated for the sashes, hung with iron butt hinges to the sides of frames, and fastened with strong iron buttons. The plastering finishes around them against corner beads.

The windows of common size for the three stories, to be double hung, with best steel axle 2-inch pulleys, sash wire, and square cast-iron weights. The windows to be shaped as per drawings, with jambs  $1\frac{3}{4}$ -inch thick, grooved together with the casings or boxes, and well screwed to the blocks walled into the brick-work for the purpose. Sub-sill  $2\frac{1}{2}$  inches thick.

Boxes and beads according to drawings; parting pieces of boxes to be of hardwood. The sash to be  $1\frac{3}{4}$ -inch thick, moulded and finished as shown on the several drawings. These windows have inside shutters, of  $1\frac{1}{4}$ -inch stuff, parted at half height, have six folds, with two moulded panels each; the central



ones to have walnut frames inserted, with movable slats.

These windows have inside a moulded sill, resting upon moulded panel backs of  $1\frac{1}{4}$ -inch stuff, and plain wooden sides, all strictly according to drawings.

The museum windows to be made strictly according to detail sheet, with plain 2-inch frames. Sash to be of  $1\frac{1}{2}$ -inch stuff. The semi-circular top is stationary, except the centre part, which is hinged. The ornamental work in the sash is inserted and furnished of zinc. They have  $2\frac{1}{2}$ -inch sub-sills, moulded inside sills, paneled backs, and sides like the others.

The oval attic windows are  $1\frac{3}{4}$  inch thick and made pivoting

The sash of large attic windows is  $1\frac{3}{4}$  inch thick and has common frames.

All the windows of the three stories have inside moulded architraves, 8 inches wide, of thicknesses as per drawings. They rest upon sub-sills.

All projecting corners of plastered walls to be protected by corner beads, firmly nailed and fastened to walls.

All wooden blocks necessary for the substantial fastening of doors and window frames, jambs and architraves of wood and iron, mouldings, skirtings, and any other wood and iron work specified, to be of sound wood, of the necessary sizes, delivered at the time wanted, and put in at the proper places.

Do all cutting away for and make good after plumbers, gas, and furnace men, and screw down traps for pipes, as may be directed.

All other carpenter-work necessary for the completion of the building, as represented in the drawings, to be well and faithfully done and furnished of lumber as specified, in a good and substantial manner.

#### HARDWARE.

A first quality American front-door lock, handle to be furnished and fitted by iron man, plated butt hinges, and top and bottom spring hinges.

The necessary fastenings to be furnished for vestibule door.

Strong and substantial plain locks and bolts for the other outside doors.

The inside doors of basement to have plain morticed locks and mineral knobs.

The inside doors on the other stories to have upright morticed locks and porcelain knobs.

The museum and larger attic windows to have

Trimmings.

Corner beads.

Wooden blocks.

Miscellaneous.

Locks.

Spring fastenings.

most approved spring fastenings, of sufficient strength for their purposes.

All sash to have strong bronze fasteners on the parting rails, of best quality.

Miscellaneous.

All the hardware is to be of the most approved kind, sufficient size and strength, best American manufacture, and to be selected in consultation with architect.

#### TIN-WORK.

Tin roofing.

The flat roofs on top of the slated sides of French roofs will be covered with the best quality of charcoal, leaded, double X roofing tin, laid in the best manner, soldered, finished, and well secured to the sheathing with clamps of the same material, substantially nailed down and turning down over the head at eaves, and must be nailed from the under side. Also, the roof over staircase and pediment of front.

The tops and sides of all the attic windows to be tinned with same material, flattened laps, and to have wide flashings for securing the joints of the tin with the slate-work.

Tin the lower end of French roof, including attic board, also the top of crown moulding of main cornice. Furnish and lay the gutters as formed by carpenter.

Tin flashing.

Do all the necessary flashing around the chimney and other flues and projections.

Cover over all wood-work, which would otherwise be liable to leakage, wherever it may occur.

Felt and paints.

The tin roofing to be laid upon a double course of felt, and to have one good coat of oil paint on the lower side before being put in place.

Eight four-inch down spouts, of same material as the rest of the work, with the necessary knees, painted inside.

Tin lining.

All tinning must be perfectly tight.

Furnish the bricklayer with lining for the hot-air flues of cross tin as the work progresses, and of same size as the flues.

Jobbing.

Do and perform all jobbing required on roofing, flashing and lining, and complete the whole in best manner to the full acceptance of superintending architects.

#### SLATING.

Polygonated slate.

The steep part of the French roofs to be slated with the best of Welsh polygonated slate, arranged in patterns and two colors, to have 3 inches of lap. The slate is laid upon a double layer of best

Two colors.

roofing felt, properly prepared and nailed down with two nails to every slate. Slate 8 by 16 inches in size.

The ridges to be well flushed up with cement and made water-tight.

Warrant the roof perfectly tight, and leave every slate perfect when the building is finished.

Ridges.

Miscellaneous.

#### PLASTERING.

All the wood partitions and ceilings throughout the building to be lathed with sawed laths.

Lathing.

Corridors, packing-rooms and chemist's rooms in basement, and all the wood partitions, ceilings, and brick-work, up to the ceiling below attic-story floor, to be plastered with two brown coats, made of live hair, clean, sharp, washed sand, and good wood-burnt lime, well slacked, and to have a third or finishing brown coat, which must be put on perfectly straight, plumb, and smooth, and must be floated down with water ready to receive frescoing. Take the best of material and sand for this coat.

Plastering.

In case hard-finish or white coating should be required, it has to be supplied in place of the floated brown coat, without extra charge.

Hard-finish.

All the walls must be well wetted before the mortar is put on.

The plastered ceilings of the first, second, and third story rooms, vestibule, corridors, and staircase, to get neat stucco cornices, as per drawings.

The museum has a cornice consisting of a bold cove, subordinate members and brackets, as per transverse section of building. Stucco top ornaments over the doors on first-story corridors. Also, the ornamentation on top of doors leading to museum to be in stucco-work.

Form the niches and beads around them in vestibule.

All the partitions to be plastered down to the floor.

The materials all to be of best quality, and all the work, including the necessary jobbing, to be executed in the best manner. The scaffolding in vestibule, staircase, and museum must be left standing, in good condition, for the disposal of the fresco painter, without charge.

#### PAINTING AND GLAZING.

All jambs and frames for doors and windows, all wooden window-sills, to have one good coat of oil paint before they are put up or placed in the walls.

Preliminary painting.

All tin-work, gutters, and down spouts to have two good coats of oil paint on the outside immediately after completion; tinted in slate color for roof, and in imitation of bronze for down spouts.

Tin-work.

- Sanding.** The ornamental iron-work, wooden cornices, and attic windows of the elevations to be painted in three coats, in imitation of brownstone, and to have two good coats of fine, clean, and sharp sand.
- Plain-work.** The wood-work of basement to be painted in plain three-coat work, also the common iron-work about the building.
- Graining.** All the wood-work of the upper stories usually painted in first-class houses to have three coats of oil paint, properly tinted, then to be grained in oil, in imitation of oak, and to have one coat of best varnish.
- Varnish.** The hand rails and other work of walnut to be varnished and well polished.
- Oiling.** Oil the treads and landings of the two wooden stairways with boiled linseed oil in most thorough manner. The ornamental iron main stairs will be painted in imitation of bronze, in tints, as directed; the prominent parts of scrolls in railing and stringers to be rubbed and done in genuine bronze; the colors to be mixed with good boiled linseed oil, and no turpentine must be used in painting tin or iron.
- Glazing.** All the common-sized windows of basement and the three stories will be done with best double thick Baltimore glass, of shape and sizes as marked on drawings; also the glazed panels of basement doors; further, the transom of outside doors and vestibule door, and the oval panes in the latter.
- The large museum windows, attic-story windows, and transom lights of interior doors, will be glazed with best Baltimore glass, of common thickness.
- Ground glass.** Panes of ground glass to be inserted in all the privy doors and door leading from staircase to basement.
- Enameled colored glass.** The semi-circular window lighting the stairway to be glazed with double enameled colored glass, as will be directed.
- All the glass to be set in, back-puttied, and left clear and perfect on the completion of the building. The number and sizes of the lights are indicated on elevations and marked on detail drawings.

#### FRESCOING.

The vestibule, staircase, and museum to receive a graduated frescoing in water colors, the sides to be laid off in moulded panels, with appropriate and well-blended tints; also the ceilings, which must have bold rosettes and corners, besides the finish. The cornice of museum to be properly decorated, all according to sketches to be approved by architects before they are executed, and the whole work to be done under their

special directions by persons of undoubted reputation in this branch, and to their full satisfaction. The sum of twelve hundred dollars is to be included in estimates for the purposes contained in this paragraph.

#### GASFITTER'S AND PLUMBER'S WORK.

Lay gas-pipes of proportionate diameters and in sufficient quantity, starting from a point on the ground outside of the walls, with a pipe of 1½-inch inside diameter, and branching off to the burners, indicated in red on the ground-plans, with a regular fall towards the main, without traps. The pipes must be run along the walls where the joists have their bearings, and branches will lead to each burner in centre of rooms. It is expressly stipulated that all pipes must be let in close by the bearing of the joists, so as not to weaken them.

Gas-pipes.

A supply or main water-pipe to be run to the building from a point 5 feet outside of walls; a globe valve-stop to be inserted to control it. This pipe is of galvanized iron, 2 inches inside diameter, and runs vertically up to landing of main stairs at entrance to museum. It is continued up to attic story, with 1½ and 1-inch galvanized pipe.

Water-pipes.

Three globe hose-valves for fire-plugs on basement, first and second stories, to supply hose and a screw, with hose-thread to suit standard coupling.

The supply for each story is taken from the 2-inch main by means of connecting T pieces of 1-inch inside diameter.

Each story to have a globe-valve stop-cock.

In general, the supply-pipes to all water-closets and washbasins to be 1-inch and ¾-inch galvanized iron pipe.

The water-closets to have 6-inch cast-iron soil-pipe down to ground, and connect by 8-inch vitrified terra cotta branch pipe with the main drain. Branch out 5-inch soil-pipe to each closet. Each water-closet to have a separate trap, 5-inch cast iron, Carr's hoppers, and white French closet basins. The urinals to have also separate traps. All draw-cocks shall be ¾-inch finished, compression. The iron waste-pipes of urinal and basins shall be 2-inch inside diameter. All the water-closets to have walnut closet seats and risers, except that in basement, which has pine seats and risers.

Water closets.

Washbasin in cellar to be Abendroth & Bro.'s plain iron stand, open sides and front, supported by brackets, and having brass cock, plug and chain.

Washbasins.



Washbasins on first story to have walnut stands, countersunk marble slabs, basins, silver-plated cocks, plugs and chains.

Urinals to be largest-size *china*.

Washstands of upper stories to be of Abendroth & Bro.'s latest pattern, with iron front, countersunk and enameled tops and bowls, silver-plated cocks, plugs and chains.

Everything is to be furnished and done to have the water-works in perfect working order, such as labor, fittings, hooks, bends, cement, screws, washers, and so on, and all the precautions and fixtures used in the successful execution of the above work.

LIST OF PLUMBER'S WORK AND ARTICLES REQUIRED, AND  
AS SPECIFIED ABOVE.

1. Basement: Supply the boiler-room by 1-inch pipe, 2 urinals, 2 water-closets, 1 washbasin,
2. First story: 6 water-closets, 1 urinal, 8 washbasins, 1 front-door bell with silver-plated furniture.
3. Second story: 4 washbasins.
4. Third story: 4 washbasins.

Drainage.

A vitrified terra cotta pipe of 8 inches inside diameter to be run from a point 5 feet north of front wall transversely through the building, and having 8-inch branch pipes running longitudinally in centre of corridor to the length of museum, and laid deep enough to drain the pit for boilers. Six-inch branch pipes run to lower ends of the 8 down spouts; they must also drain the areas by means of yard traps.

Yard traps.

Two yard traps will drain the corridor of basement and another one the pit of boiler-room.

All the pipes to be secured against injury from frost; to be of the best and heaviest kind. The whole work to be done to entire satisfaction and warranted perfect.

STEAM HEATING APPARATUS.

Steam heating apparatus.

Two boilers for generating the steam, not less than thirteen (13) feet long, 48 inches diameter, and fifty-three 3-inch flues each, set in brick at the place designated on the plans, in the most substantial manner, of sufficient capacity to heat effectually the entire building, including the attic story, if required, and to be supplied with cast fronts, grate bars, steam-gauge

cocks, patent gauge-cocks, stops, etc., of the most approved make, complete.

To furnish a No. 2 Woodward steam pump, for supplying the boilers and connecting the same with a condensing tank, arranged to return to the boilers the condensed water from the coils. The packing-rooms and chemist's room in basement, the vestibule on first floor, and the museum, to be warmed by direct radiating coils, covered with ornamental bronze screens of approved pattern, and each to be supplied with top and bottom stops of the most approved construction, so that they can be worked independently. The remaining part of the building to be warmed by circulated air from coils, set in brick-work in the basement, and to be supplied with registers fed by tin-lined flues.

The whole to be completed in a workmanlike manner, satisfactory to the architects in charge, and warranted sufficient for heating the whole to his satisfaction.

#### GENERAL CONDITIONS.

The specifications and drawings are intended to co-operate, so that anything exhibited in the drawings and not mentioned in the specifications, or vice versa, is to be executed the same as if both were mentioned in the specifications and set forth in the drawings, to the true meaning and spirit of said drawings, without any extra charge whatever.

Drawings and specifications co-operating.

The whole of said work to be executed with diligence and dispatch, and to be finished under express and strict stipulations, to be provided for in contract on or before the 1st of December, 1867, in the best and most complete manner; and all kinds of material and labor, all implements, moulds, and cartage of every kind, nature, and description for the due performance of the work, has to be provided and done.

The contractor or contractors will be required to remove from the premises all rubbish and dirt arising from the performance of his or their contract during the construction of the building, and finally to leave the new building clear therefrom.

Clearing.

All the work to be done under the direction of the superintending architects, and in differences or disagreement as to *size*, *material*, or *workmanship*, their decision and interpretation of their own plans, designs, and specifications is to be final. They shall have full power to reject all materials or work which they may not consider in accordance with the true spirit and

Superintendence.



meaning of the specifications and drawings. All such material furnished and all such work done shall be immediately removed, and other materials employed and work done that shall be approved by said architects. And in case of refusal on the part of contractor to comply with their decision in the premises, they shall have full power to employ other men for supplying or removing any work or materials so rejected, at the expense of contractor or contractors.

Should the Commissioner of Agriculture at any time during the progress of said work require any alteration, deviation, addition, or omission from this contract, he shall be at liberty to do so, and the same shall in no way affect or make void this contract; but the difference occasioned *thereby shall be estimated at a fair valuation, to be agreed to by the contracting parties before the said alterations are made, and the amount thereof added to or deducted from the contract price*, by endorsement upon its back, or no allowance will be made for them by either party. And should any dispute arise respecting the true value of the alterations, it shall be left to three disinterested parties, one to be chosen by the superintending architects, one by contractor, who shall choose a third, or umpire, whose decision shall be final and conclusive.

Umpire.

#### MANNER OF MAKING BIDS.

Bids.

Bidders are distinctly informed that their proposals have to be for the whole building complete, with the sole exclusion of heating apparatus, as per specifications, a copy of which must be enclosed with the bid.

CLUSS & KAMMERHUEBER,

*Architects and Civ. Eng'rs.*

WASHINGTON, April 18, 1867.





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